

CLAIMS

1. A method for producing hollow polyhedral fine particles consisting of atoms of a first element and atoms of a second element, wherein atoms of said first element and atoms of said second element are structured in a reversed micelle composed of a surfactant.

2. A method for producing hollow polyhedral fine particles consisting of atoms of a first element and atoms of a second element, comprising the steps described below:

a first step of dissolving or dispersing a surfactant, a compound containing atoms of said first element, and a compound containing atoms of said second element, in an aqueous medium to obtain an aqueous solution or an aqueous dispersion;

a second step of adding an oily medium to said aqueous solution or dispersion to obtain a double phase contacting liquid in which an aqueous phase and an oily phase directly contact;

a third step of forming reversed micelles composed of said surfactant in said oily phase of said double phase contacting liquid; and

a fourth step of structuring atoms of said first element and atoms of said second element in said reversed micelles to obtain hollow polyhedral fine particles.

3. The method for producing hollow polyhedral fine particles according to claim 2, further comprising a fifth step of separating and recovering said hollow polyhedral fine particles from said oily phase, after said fourth step.

4. The method for producing hollow polyhedral fine

particles according to any one of claims 1 to 3, wherein said first element and said second element are the same element.

5. The method for producing hollow polyhedral fine particles according to any one of claims 1 to 3, wherein said first element and said second element are different elements.

6. The method for producing hollow polyhedral fine particles according to claim 5, wherein said first element is Cd, and said second element is Se.

7. A hollow polyhedral fine particle represented by the following chemical formula: $(\text{CdSe})_{33}$ or $(\text{CdSe})_{34}$.